Issue Resolution Table

This table includes directive EPA comments related to development of the remedial investigation report and risk assessment, which LWG identified as potential dispute issues. EPA and LWG have agreed to the stated resolutions in order to resolve them without dispute and to provide additional clarification. It should be noted that the LWG and EPA are working to resolve other technical issues related to the remedial investigation report and risk assessment that are presented in this table. The baseline risk assessment should be considered in the context of site-specific considerations, (including background), used in conjunction with other lines of evidence, and weighed accordingly.

It is understood that prior EPA comments on issues that need not be resolved in order to write the draft RI and RA are guidance for ongoing discussions and are not yet identified for dispute resolution. These include, but are not limited to:

- All PRG-related comments, which are to be resolved in the FS-related documents (e.g., PRG tech memos, alternatives screening report and FS);
- EPA's March 20 comments on Section 10, including all EPA comments on what is or may be an ARAR;
- All FS guidance and comments.

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Issue Number	EPA Comment Number	Issue/EPA Comment Summary	Resolution Approach
1	1/15/08 EPA comments 53, 54, 86, 251, 253, 325	**Inclusion of residential and worker surface water drinking water scenario in HHRA** [PARTIAL EPA COMMENT #253 SHOWN HERE – FOCUS ON SURFACE WATER AS A DRINKING WATER SOURCE] The HHRA in the Round 2 Report includes a risk characterization for the integrated SW samples, assuming ingestion of SW as a drinking water source by transients and through inadvertent ingestion by recreational users during swimming. SW as a Drinking Water Source – Scenarios that evaluate the risk from drinking surface water for workers and residents should be added to the CSM and to the RI baseline HHRA. These evaluations can be done using integrated SW samples to identify COPCs. Region 6 screening levels should be used in place of the tap water PRGs from Region 9 (for non-cancer screening levels assume an HI= 0.1).	The LWG will perform the work directed by these comments. EPA agrees that the LWG and its members have preserved the right to object to future identification of MCLs as ARARs for Portland Harbor surface water or to remedy decisions based upon surface water drinking water exposures.
2	1/15/08 EPA comments include 253, 309, and 325	**Evaluation of surface water protective of fish consumption in the HHRA using "Organism Only" AWQC** SW as a Source of Contaminants in Biota – This evaluation should be included in the baseline risk assessment/risk characterization. The maximum concentration of a chemical from all SW data (including near bottom samples) should be used and screened against WQC, based upon an ingestion rate of 175 g/day (not 17.5 g/day). For those COPCs selected (all should be listed in the narrative), the sample-specific water data should be compared to collocated biota data. If these COPCS are identified as COCs in the co-located biota data, the biota data may be used for evaluating the SW COPCs from this sampling area. If a COPC is not a COC in co-located biota or if co-located biota data are not available for a SW sampling location, these chemicals should remain as COPCs, identified as a possible data gap for site-specific remediation and source control, and discussed in the uncertainty section.	The LWG will screen surface water data against WQC based on an ingestion rate of 17.5 g/day and 175 g/day. Surface water data should be evaluated in conjunction with co-located biota data in the baseline risk assessment. The LWG and EPA will continue to discuss the role of AWQCs in PRG development or as ARARs, and EPA agrees that the LWG and its members retain their ability to object to future use of AWQCs for either of these purposes. LWG recognizes that additional technical resolution is required to fully resolve this issue but has not identified any other elements that warrant dispute.
3	1/15/08 EPA comments include 253 and 325	**Drinking Water HHRA Exposure Scenarios for Transition Zone Water (TZW)**	The LWG will present this comparison in Section 6 as required by EPA. The LWG will also estimate the average surface water concentrations associated with transition zone

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		TZW as a Source to Surface Water to Be Used as a Drinking Water Source – The screening evaluation done in Section 6 should remain in Section 6 rather than be included in the baseline risk assessment and risk characterization, and Region 6 screening levels should be used in place of the tap water PRGs from Region 9 (assume HI=0.1 for non-cancer). However, the maximum value from all TZW data, including that from deeper depths (e.g., 90 cm), should used in the screening. The results from the loading estimates and models in Appendix D that are discussed in Section 6 to estimate SW concentrations from TZW COPCS will be reviewed as part of Appendix D. The conclusions based on the Appendix D review will be incorporated into Section 6.	water discharges through loading calculations. The estimated surface water concentrations will be compared with MCLs and Region 6 Tap Water PRGs. EPA agrees that the LWG and its members have preserved their ability to object to addressing this risk pathway in any manner in the evaluation of remedial alternatives.
4	1/15/08 EPA comments include 253 and 325	**HHRA Screening of TZW as a Source of Contaminants in Biota** [PARTIAL EPA COMMENT #253 SHOWN HERE – FOCUS ON SW/TZW SCREENING] TZW as a Source of Contaminants in Biota – This evaluation should be included in the baseline risk assessment/risk characterization. The maximum value from all TZW data, including that from deeper depths (e.g., 90 cm), should be screened against WQC based upon a consumption rate of 17.5 g/day. EPA does not agree with the analyses in Sections 6.2.1.2 (Derivation of HH WQC) or Section 6.2.1.3 (Applying Adjustment Factors to Screening of TZW Data Against HH AWQC). The specific page-by-page comments that follow include more in-depth comments on these 2 sections. The following should be done for COPCS that are identified for TZW as a source of contaminants to biota: (1) TZW COPCs that were not analyzed for in biota (e.g., VOCs and cyanide) should be discussed qualitatively, including the uncertainties; remain as COPCs; and should be identified as potential data gaps for site-specific remediation and source control. (2) For those TZW COPCs that were analyzed for in shellfish, the sample-specific water data should be compared to co-located biota data. If these COPCs are identified as COCs in the co-located clam and crayfish data, the biota data may be used for evaluating the TZW COPCs from this sampling area. If a COPC is not a COC in co-located biota or if co-located biota data are not available for a SW sampling location, these chemicals should be remain as COPCs, identified as a possible data gap for site-specific remediation and	EPA agrees the evaluation of TZW as a source of contaminants in biota is no longer required in the HHRA. The HHRA will rely primarily on clam and crayfish tissue data for the purpose of evaluating this exposure pathway. EPA may in the future still require the presentation of TZW data relative to human health fish consumption AWQC for the purpose of evaluating the contribution of contaminated groundwater to biota tissue.

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		source control, and discussed in the uncertainty section. All COPCS identified in TZW and SW in all four of the screenings above should be retained for the RI/FS. In addition, the narrative should include a list of all of the COPCs selected in the initial screen. The CSM should be reviewed to ensure that any needed modifications that might result from evaluation of SW and TZW in the HHRA be incorporated.	
5	1/15/08 EPA comments include 252, 57, 59, 88, 275, 277, and 339	**Clam Consumption Scenario in HHRA** It is unclear whether the maximum consumption rate for shellfish assumed in the risk assessment (18 g/day which is a little more than 1 pound per month (one pound in 3.6 weeks)) is sustainable at some or all of the areas where bivalves were collected, now or in the future. EPA believes that sufficient information exists to support the clam consumption scenario. However, EPA acknowledges that an appropriate exposure area should be determined in consideration of water depth (i.e., nearshore areas) and the area over which a sustainable shellfish harvest consistent with the clam consumption is possible. EPA proposes that the EPC for clams only (not crayfish) be calculated by combining clam composites from approximately 1 mile on each side of the river. EPA proposes that the selection of composites to be used for calculating each EPC be done jointly by EPA and LWG. EPA also cautions that although 1 mile will serve as the starting point for forming composites, best professional judgment should be used in combining composites that are on the boundaries of these 1-mile segments, especially those that have the potential to be impacted by a given source.	EPA and the LWG agree to include this scenario in the HHRA using 1-mile segments for calculating EPCs pending agreement on details of the assessment. As with other ecological and human health risk scenarios, LWG understands this agreement does not waive our right to dispute how the risk assessment is used to evaluate remedial alternatives.
6	1/15/08 EPA comments include 3, 287, 288, 289, and 291	**Uncertainty Discussions in Baseline Risk Assessments** The Round 2 Report includes many instances of qualifying or judgmental statements. These statements should generally be replaced with factual statements supported by site data and other information. This is a particular concern with the preliminary human health and ecological risk evaluations. There are numerous statements that suggest that the exposure assumptions and effects information are overly conservative. The risk evaluation process proposed by EPA relies on exposure assumptions consistent with a reasonable maximum exposure (RME) approach and an effects assessment that is consistent with EPA guidance and standard risk assessment practices. A discussion of the uncertainties associated with the exposure assumptions and the effects assessment should be presented in the uncertainty section for	Uncertainty and assumptions used will be discussed in a factual manner throughout the BERA and HHRA consistent with EPA RAGS A guidance. The reports will be organized to address uncertainties at the end of a report section in which the evidence is presented rather than in an uncertainty section at the end of the report. For example, the uncertainty in the effects assessment will be presented at the end of effects assessment section. Judgmental and qualifying language will not be used in the uncertainty discussions.

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		the baseline human health and ecological risk assessments.	
7	1/15/08 EPA comments include 5, 65, 184, 186, 187, and 189	**Study Area Boundary** The term "Study Area" as used in the Round 2 Report refers to the area of investigation from approximately RM 2 to RM 11, and the Round 2 Report presents LWG's evaluation for this area. The "Study Area" for the RI Report will include additional adjacent areas upstream of RM 11 and downstream of RM 2 where data have been/are being collected as part of Round 3. This area includes approximately RM 1 to RM 12.2 and a portion of Multnomah Channel.	EPA and the LWG agree to expand the Study Area to River Mile (RM) 11.8 and to consider downstream extension of the Study Area to RM 1 and into Multnomah Channel pending assessment of the R3B sediment data and other appropriate data.
8	2/15/08 EPA Problem Formulation for the BERA page 26 fn. 2	**Lamprey Evaluation** "[Pacific Lamprey] is a special-status species and will be evaluated at the more conservative individual organism level in the risk characterization."	The LWG disagrees that Pacific Lamprey should be evaluated at the individual level. An EPA response to the LWG position is under development and will be generated in the near future. EPA agrees that LWG does not waive the right to dispute EPA's determination regarding lamprey.
9	2/15/08 EPA Problem Formulation for the BERA	**BERA Problem Formulation issues**	The LWG will perform the work directed in the revised BERA problem formulation as agreed to by EPA and the LWG (to be prepared in early summer 2008) and will also provide additional analysis and evaluation as appropriate for a baseline risk assessment.
10	3/24/08 EPA letter on Status of Round 3 Sampling Activities	**Analysis of Osprey Eggs**	EPA is not directing the LWG to perform this work. EPA believes this is a good collaboration opportunity for the LWG and encourages the LWG to participate.
Clarifications			

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11	1/15/08 EPA comments 10 and 304	**Background** EPA Comment 10: This section also includes a statement about the upstream fish tissue samples collected at RM 20 and RM 28. These data should be used for information purposes only. EPA will not be using this information to establish cleanup levels at the Portland Harbor site nor to develop background concentrations. EPA Comment 304: This section, Upstream Fish Consumption, should be deleted, as should Attachment F1. Possibly some comparison of "background" sediments to site sediments could be included here to demonstrate the point that since sediments from areas that are considered "background" for the PH site are contaminated (although at much lower levels), fish would also expected to be contaminated at much lower levels. This language should be discussed with EPA before including it in the HHRA.	EPA agrees that upstream fish tissue data should not be used in background assessments or risk assessment but could be presented in the RI Report for "informational purposes".
12	1/15/08 EPA comment 230	**Degradation Rates** Data Sources: STA, SPI, bathymetric surveys, sediment stakes, ADCP, sediment data, TSS, settling velocity, erosion rates. A significant amount of effort has been put into assessing the physical fate and transport processes, but much less into assessing the chemical processes – e.g., biodegradation and chemical transformation. For many chemicals at the site (e.g., metals, PAHs, PCBs, chlorinated pesticides and chlorinated dibenzo dioxins and furans), chemical and biological degradation are expected to be very slow, variable throughout the site, and may result in the formation of chemicals that are also toxic. In addition, literature values for chemical and biological degradation are variable and may not apply to the Portland Harbor Site. As a result, the draft RI Report should assume that chemical and biological degradation do not occur for the aforementioned chemicals to a significant degree, and that physical processes (e.g., burial) are the key factors in assessing monitored natural recovery (MNR).	Discussion on this issue is ongoing between EPA and the LWG. EPA agrees that dispute is not waived on this issue so long as it is raised by June 1, 2008.
13	1/15/08 EPA comment 190	**Riparian Soils** Further evaluation of the riparian soil data is required. EPA expects that riparian soils will achieve sediment cleanup levels established for the Portland Harbor site, as well as risk-based cleanup levels established at upland sites for terrestrial receptors. Source control measures in conjunction with sediment remediation will be required to achieve these cleanup levels.	EPA confirms that assessing risk to upland terrestrial receptors refers to the DEQ process, not the work of the LWG.

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14	3/20/08 EPA comments on Sec. 10, p. 4, last bullet :	**Promulgated Criteria** "Relevant PRGs to be used include the federal Safe Drinking Water Act Maximum Contaminant Levels (SDWA MCLs) and EPA Region 6 screening level values for residential drinking water." "The criteria described above should be used to develop PRGs based on risk screening levels and chemical specific ARARs."	PRGs can come from multiple sources, even non promulgated guidances, Region 6 Tapwater PRGs are not ARARs.

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